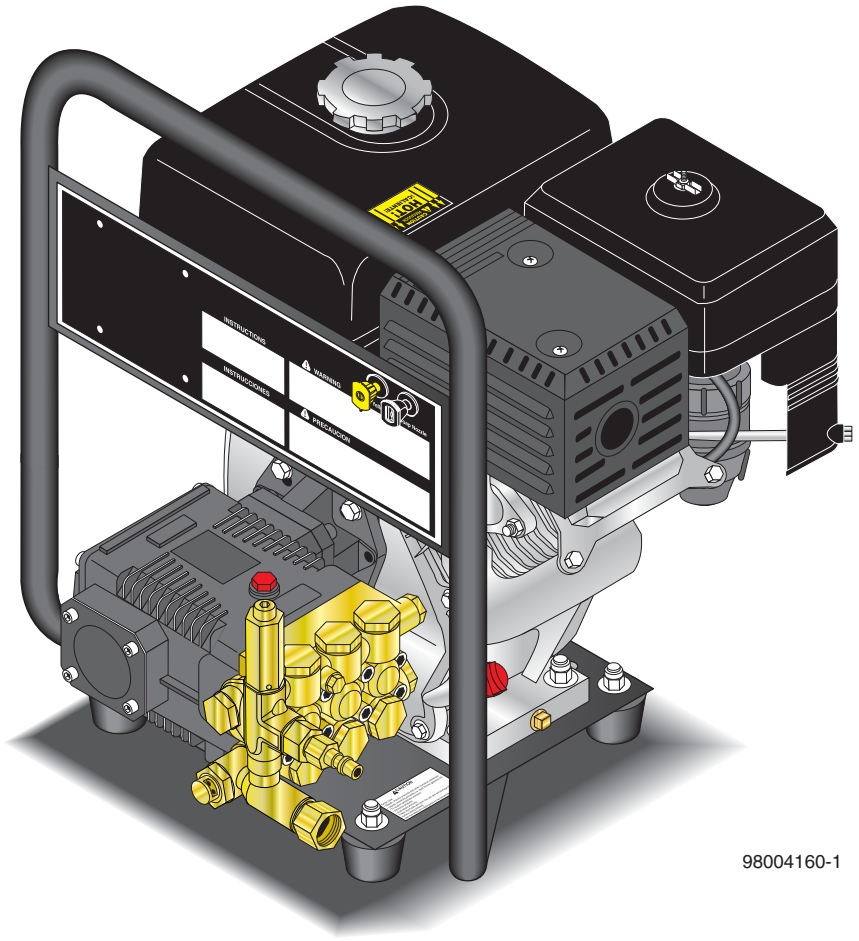
SERVICE MANUAL



98004160-1

MODEL #	ORDER #
■ HC-232439	1.107-036.0
■ HC-232336	1.107-035.0
■ ZG3-24334	1.107-081.0
■ ZG3-23236	1.107-018.0
■ HD 2.3/24 P	1.575-350.0
■ HD 2.3/23 P	1.575-351.0
■ CD-232437	1.107-152.0
■ CD-232336	1.107-153.0

9.800-416.0

CONTENTS

Hose and Spray Gun Assembly 3
Exploded View 4
Exploded View Parts List 5
G.1 Series Pump Exploded View and Parts List 6-7
Axial Pump Exploded View and Parts List 8
Axial Pump, Housing View, Exploded View and Parts List 9
VBA 35 Unloader Exploded View and Parts List 10
UU1 Unloader Exploded View and Parts List 11
Troubleshooting 12-13

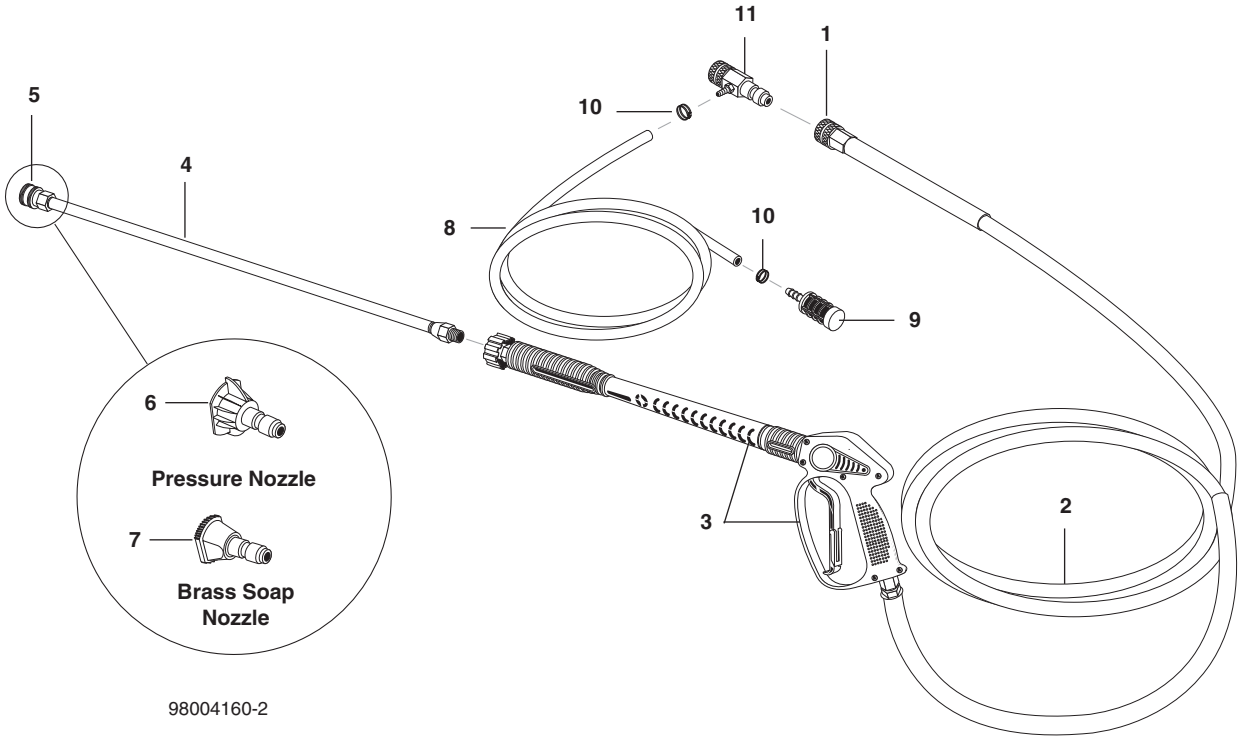
Model Number _____

Serial Number _____

Date of Purchase _____

The model and serial numbers will be found on a decal attached to the pressure washer. You should record both serial number and date of purchase and keep in a safe place for future reference.

HOSE & SPRAY GUN ASSEMBLY

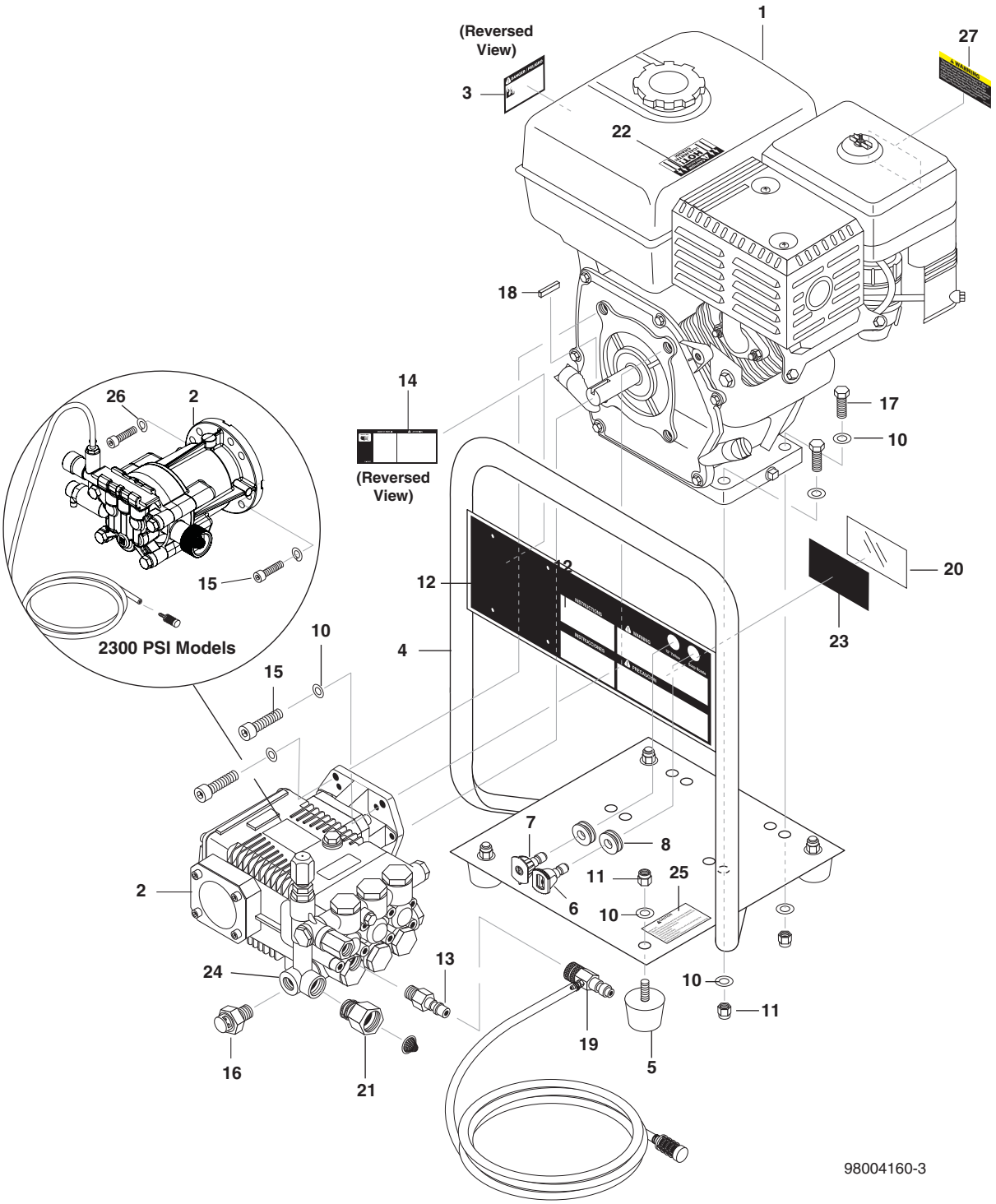


HOSE & SPRAY GUN ASSEMBLY PARTS LIST

ITEM	PART NO.	DESCRIPTION	QTY
1	9.802-166.0	Coupler, 3/8" Female (2400 PSI)	1
	9.802-100.0	▲ Quick Coupler O-Ring (2400 PSI)	1
	8.707-182.0	▲ Coupler, Twist Connect, M22-F x 3/8" FNPT (2300 PSI)	1
2	8.739-106.0	Hose, 3/8" x 25', 1 Wire, Tuff-Flex (Hotsy)	1
	8.739-124.0	Hose, 3/8" x 30', 1 Wire, Tuff-Flex (Kärcher)	1
	8.739-133.0	Hose, 3/8" x 25', 1 Wire Tuff Flex (Landa)	1
3	9.802-223.0	Spray Gun, Shut-Off	1
4	9.802-220.0	Wand, Straight	1
5	9.802-164.0	Coupler, 1/4" Female	1
	9.802-096.0	Quick Coupler O-Ring	1
6	8.712-333.0	Nozzle, 3.0 15° Yellow (2400 PSI)	1
	9.104-024.0	Nozzle Kit 3.25 (2300 PSI)	1
7	8.712-398.0	Nozzle, Brass Soap (2400 PSI)	1
8	9.802-251.0	Hose, 1/4" x 1/2" Clear Vinyl (2400 PSI)	6 ft.
	6.388-216.0	Hose, DN5 (2300 PSI)	6 ft.
9	8.707-057.0	Strainer, 1/4" Plastic (2400 PSI)	1
	5.731-609.0	Strainer, Plastic (2300 PSI)	1
10	6.390-126.0	Clamp, Hose (2400 PSI)	2
11	9.802-216.0	Injector, Chem., Non-Adj, 3-5 GPM, .083 (2400 PSI)	1

▲ Not Shown

EXPLODED VIEW

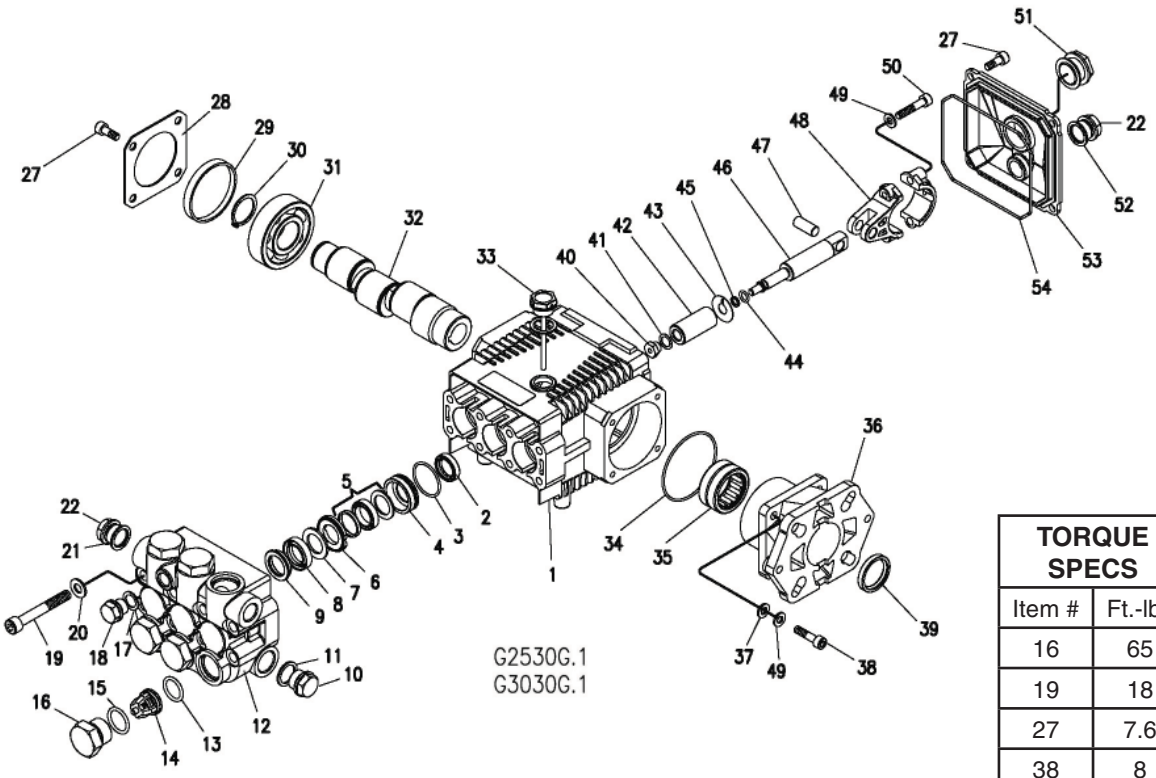


EXPLODED VIEW PARTS LIST

ITEM	PART NO.	DESCRIPTION	QTY
1	9.802-316.0	Engine, Honda, GX160K1QX2, 5.5 HP (2400 PSI)	1
	9.194-015.0	Engine, Honda, GC1601QHA, 5 HP (2300 PSI)	1
2	9.804-033.0	Pump, Kärcher KG2530G (3000)	1
	9.120-021.0	Pump, Kärcher Axial (2600 PSI)	1
	8.904-248.0	Pump, Hotsy HE 2530G	1
	8.904-893.0	Pump, Landa LG 2530G	1
	8.920-004.0	Pump, Legacy 2.6 GPM (2600 PSI)	1
3	9.800-008.0	Label, Danger Cool Engine	1
4	9.802-873.0	Handle Assembly	1
5	9.802-063.0	Mount, Vibration, 5/16"-18 x 9/16" Stud, 30 Duro	4
6	See Page 15 For Nozzle Information		
7	See Page 15 For Nozzle Information		
8	9.802-064.0	Grommet, Rubber, Nozzle Holder	2
9	9.800-017.0	▲ Tag, Pump Plug/Dipstick (2400 PSI)	1
	9.800-095.0	▲ Tag, Pump Plug/Vented Cap (2300 PSI)	1
10	8.718-980.0	Washer, 5/16" Flat, SAE	16
11	9.802-776.0	Nut, 5/16", ESNA, NC	8
12	9.800-059.0	Label, Warning/Instructions (HD Models)	1
	8.750-883.0	Label, Warning/Instructions (CB Models)	1
	8.900-893.0	Label, Warning/Instructions (HC Models)	1
	8.900-827.0	Label, Warning/Instructions (ZG Models)	1
13	9.802-171.0	Nipple, 3/8" x 3/8" NPT ST Male	1
14	9.800-037.0	Label, French Warning	1
15	8.733-007.0	Socket head 5/16"-24 X 3/4" Zinc Plated	4
16	9.804-025.0	Pump Protector, 1/4" 145°(2400 PSI)	1
17	9.802-713.0	Bolt, 5/16" x 1-1/4", 145°	4
18	9.802-958.0	Key, Motor Shaft	1
19	9.802-225.0	Detergent Injector Assy 3-5 GPM 0.83 (2400 PSI)	1
20	9.800-034.0	Label, Clear Lexan, 2-1/4" x 4"	1
21	9.802-146.0	Swivel, 1/2" MP x 3/4" GHF w/Strainer (2400 PSI)	1
22	9.800-006.0	Label, "Hot/Caliente", w/Arrows	1
23	8.932-968.0	Label, Intended For Outdoor Use	1
24	9.803-899.0	Unloader, VBA35 6.6 @ 3500 PSI (HC & ZG3 Models)	1
	9.175-018.0	UU1 3500PSI, Universal Unloader (HD Model)	1
25	9.800-049.0	Label, Manufacturers Cleaning Solution	6 ft.
26	9.802-813.0	Lock Washer (2300 PSI)	4
27	8.917-015.0	Label, Regulation 4442.6	1

▲ Not Shown

G.1 SERIES PUMP EXPLODED VIEW



TORQUE SPECS	
Item #	Ft.-lbs
16	65
19	18
27	7.6
38	8
40	7
50	13

G.1 SERIES PUMP EXPLODED VIEW PARTS LIST

ITEM	PART NO.	DESCRIPTION	QTY
1	9.803-938.0	Crankcase	1
2*	See Kit Below	Plunger Oil Seal	3
3*	See Kit Below	O-Ring Ø1.78 x 28.30	3
4*	See Kit Below	Pressure Ring, 15mm	3
5*	See Kit Below	U-Seal, 15mm	3
6*	See Kit Below	Intermediate Ring 15mm	3
7*	See Kit Below	Backup Ring 15mm	3
8*	See Kit Below	U-Seal, 15mm	3
9*	See Kit Below	Support Ring, 15mm	3
10	9.802-926.0	Brass Plug, 1/2"	1
11	9.803-199.0	Copper Washer 1/2"	1
12	9.803-946.0	Manifold Housing	1
13*	9.803-947.0	O-Ring Ø1.78 x 15.54	6
14*	See Kit Below	Valve Assembly	6
15*	9.803-948.0	O-Ring Ø2.62 x 18.77	6
16	9.803-949.0	Valve Plug	6
17	9.803-950.0	Washer, Copper	1
18	9.803-951.0	Brass Plug G1/4	1

ITEM	PART NO.	DESCRIPTION	QTY
19	9.803-952.0	Manifold Stud Bolt	8
20	9.802-884.0	Washer	8
21	9.803-198.0	Copper Washer 3/8"	1
22	9.802-925.0	Brass Plug 3/8"	2
27	9.802-939.0	Hexagonal Screw	9
28	9.803-953.0	Bearing Cover	1
29	9.803-954.0	Seal Bearing	1
30	9.802-914.0	Snap Ring	1
31	9.803-955.0	Ball Bearing	1
32	8.717-069.0	Crankshaft (2530G)	1
	8.717-070.0	Crankshaft (3030G)	1
33	9.803-957.0	Oil Dip Stick	1
34	9.804-581.0	O-Ring 3.53 x 55.56	1
35	9.804-582.0	Needle Roller Bearing	1
36	8.717-212.0	Engine Flange	1
37	9.803-210.0	Spring Washer	4
38	9.804-584.0	Flange Screw	4

G.1 SERIES PUMP EXPLODED VIEW PARTS LIST (CONT)

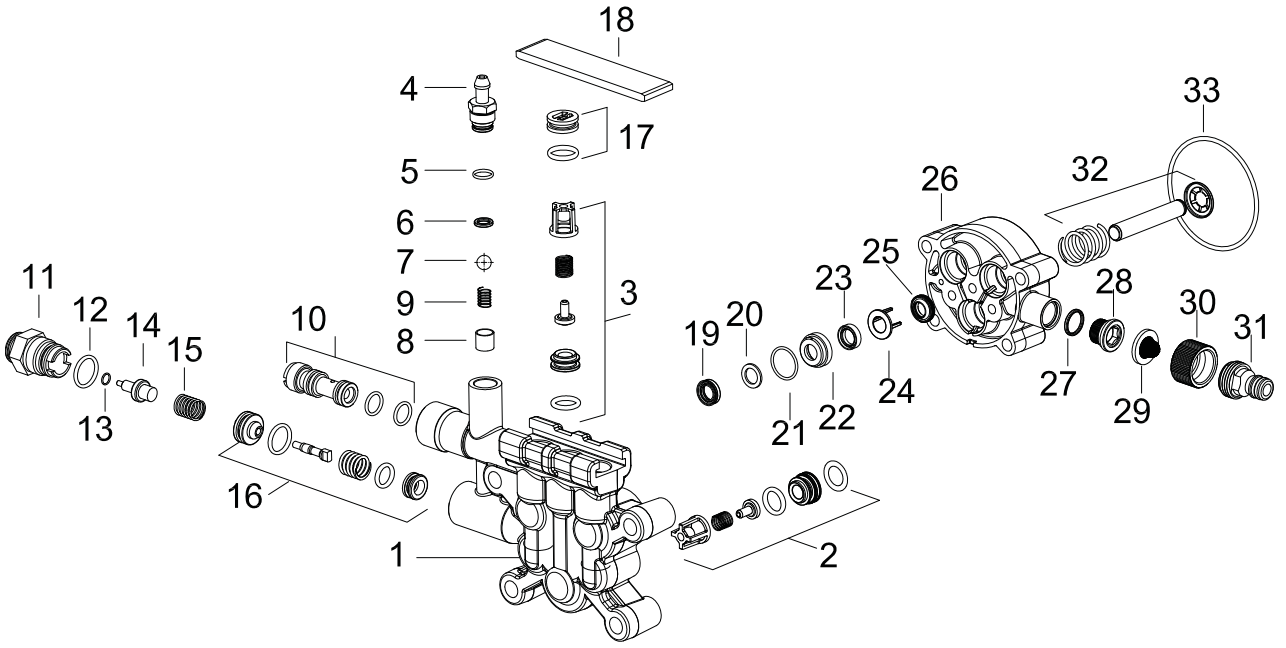
ITEM	PART NO.	DESCRIPTION	QTY
39	9.804-585.0	Crankshaft Seal	1
40*	See Kit Below	Plunger Nut	3
41*	See Kit Below	Copper Spacer	3
42*	See Kit Below	Plunger, 15mm	3
43*	See Kit Below	Copper Spacer	3
44*	See Kit Below	O-Ring Ø1.78x5.28	3
45*	See Kit Below	Teflon Ring	3
46	9.803-964.0	Plunger Rod	3
47	9.803-965.0	Connecting Rod Pin	3
45	9.803-966.0	Connecting Rod	3
49	9.803-218.0	Spring Washer	6
50	8.933-020.0	Connecting Rod Screw	6
54	9.803-969.0	O-Ring 2.62 x 107.62	1
53	9.803-968.0	Crankcase Cover	1
52	9.803-197.0	Gasket, G3/4	1
51	9.803-202.0	Sightglass G3/4	1

* Part available in kit (See below)

REPAIR KIT NUMBER	8.725-354.0	8.725-355.0	9.803-934.0	9.803-936.0	9.803-937.0
KIT DESCRIPTION	Plunger Seal 15mm	Complete Seal Packing 15mm	Plunger 15mm	Complete Valve	Plunger Oil Seals
ITEM NUMBERS INCLUDED	3, 5, 7, 8, 9	3, 4, 5, 6, 7, 8, 9	40, 41, 42, 43, 44, 45	13, 14, 15	2
NUMBER OF CYLINDERS KIT WILL SERVICE	3	1	1	6	3

AXIAL PUMP EXPLODED VIEW AND PARTS LIST

9.120-021.0
8.920-004.0

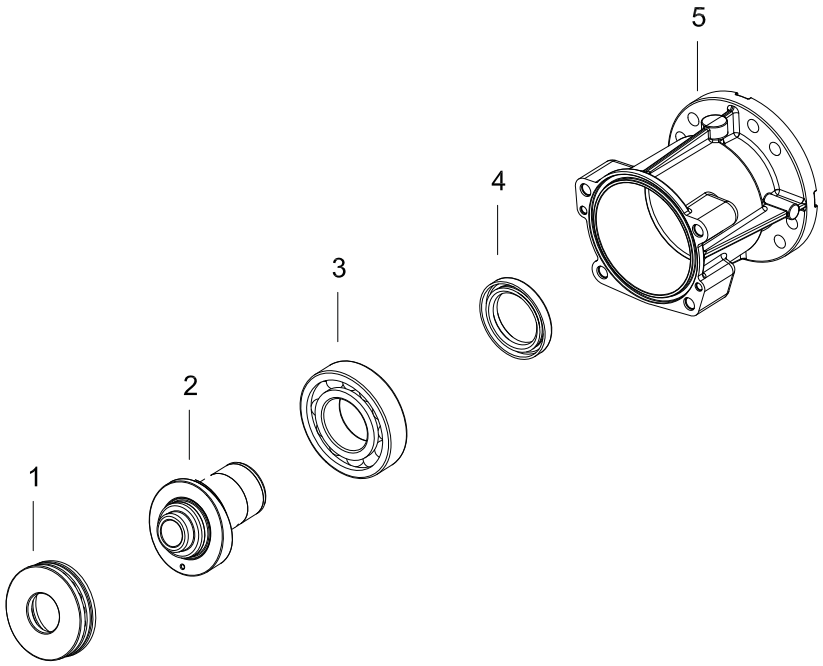


ITEM	PART NO.	DESCRIPTION	QTY
1	9.135-015.0	Cylinder Head	1
	8.762-010.0	Cylinder Head, Legacy	1
2	9.175-004.0	Valve Assy Horizontal	3
3	9.139-371.0	Spare Part List, Set 3	1
4	5.443-448.0	Nipple Chemestry	1
5	6.362-451.0	O-Ring Seal 8.0 x 1.0	1
6	6-362-634.0	O-Ring Seal, 5.28 x 1.78	1
7	7.401-909.0	Sphere 7 G40 - 1.4401	1
8	5.110-714.0	Sleeve	1
9	5.332-258.0	Helical Spring	1
10	9.139-372.0	Spare Part List Nozzle INS 020/021 Pump	1
11	9.184-018.0	Outlet-Thermal Valve	1
12	6.362-480.0	O-Ring Seal, 12.42 x 1.78	1
13	7.362-507.0	O-Ring Seal 8 x 2 NBR 90	1
14	6.413-403.0	Thermo Valve Tin Coated	1
15	5.332-290.0	Helical Spring	1
16	9.175-005.0	Unloader Assembly	1

ITEM	PART NO.	DESCRIPTION	QTY
17	4.132-007.0	Drain Plug Replacement	1
18	5.003-062.0	Plate	1
19	9.177-301.0	High Pressure Seal	3
20	9.177-310.0	Back Ring	3
21	6.362-833.0	O-Ring Seal 12.5 x 1.73	3
22	9.155-011.0	Housing Low Pressure Seal	3
23	6.363-058.0	Grooved Ring	3
24	9.134-016.0	Spacer	3
25	6.365-393.0	Oil Sealing 12.20x4/6	3
26	9.133-007.0	Piston Guide	1
27	6.362-390.0	O-Ring Seal 15.6 x 1.8	1
28	9.134-019.0	Male Adapter	1
29	9.181-005.0	Filter Seal	1
30	9.155-013.0	Female House Conn	1
31	9.178-005.0	Adapter Garden	1
32	9.139-370.0	Spare Part List, Piston	1

AXIAL PUMP EXPLODED VIEW PARTS LIST

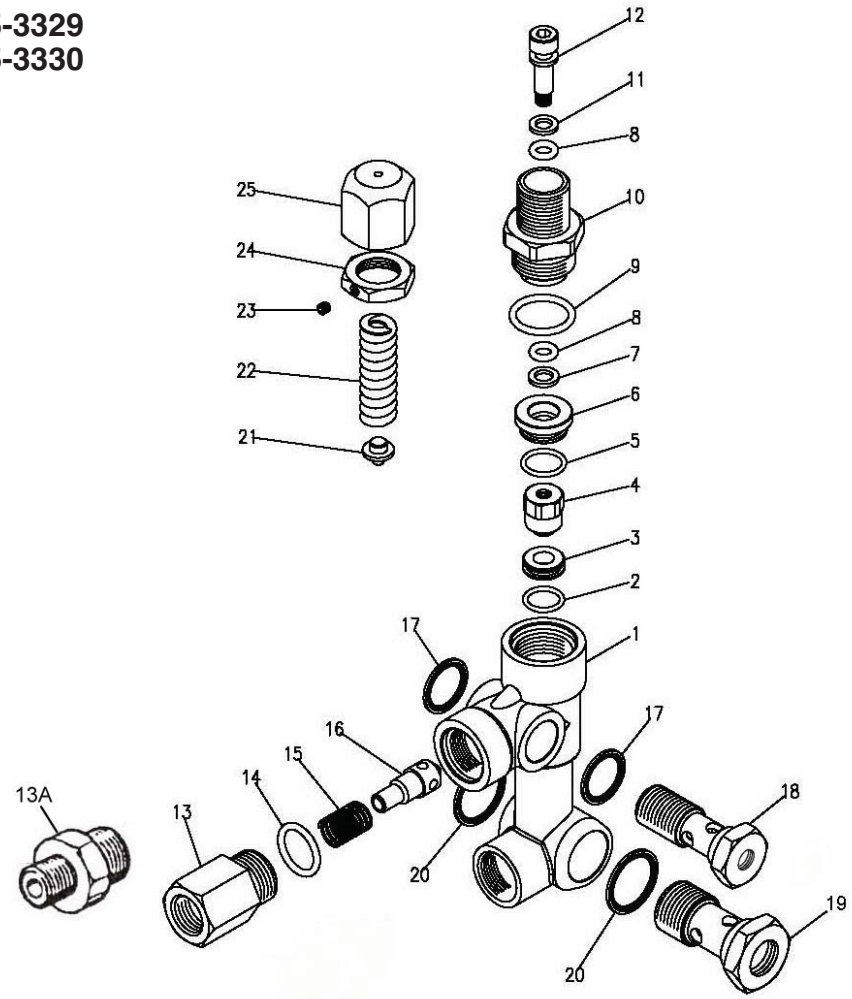
9.120-021.0 Housing View
8.920-004.0 Housing View



ITEM	PART NO.	DESCRIPTION	QTY
1	9.166-016.0	Grooved Ball Bearing	1
2	9.135-018.0	Swash Plate Hor.	1
3	9.165-356.0	Ball Bearing No 6207	1
4	9.177-314.0	Radial Seal 35 x 52 x 7	1
5	9.135-016.0	Oil Housing	1

VBA 35 UNLOADER EXPLODED VIEW

9.803-899.0 5-3329
9.803-900.0 5-3330



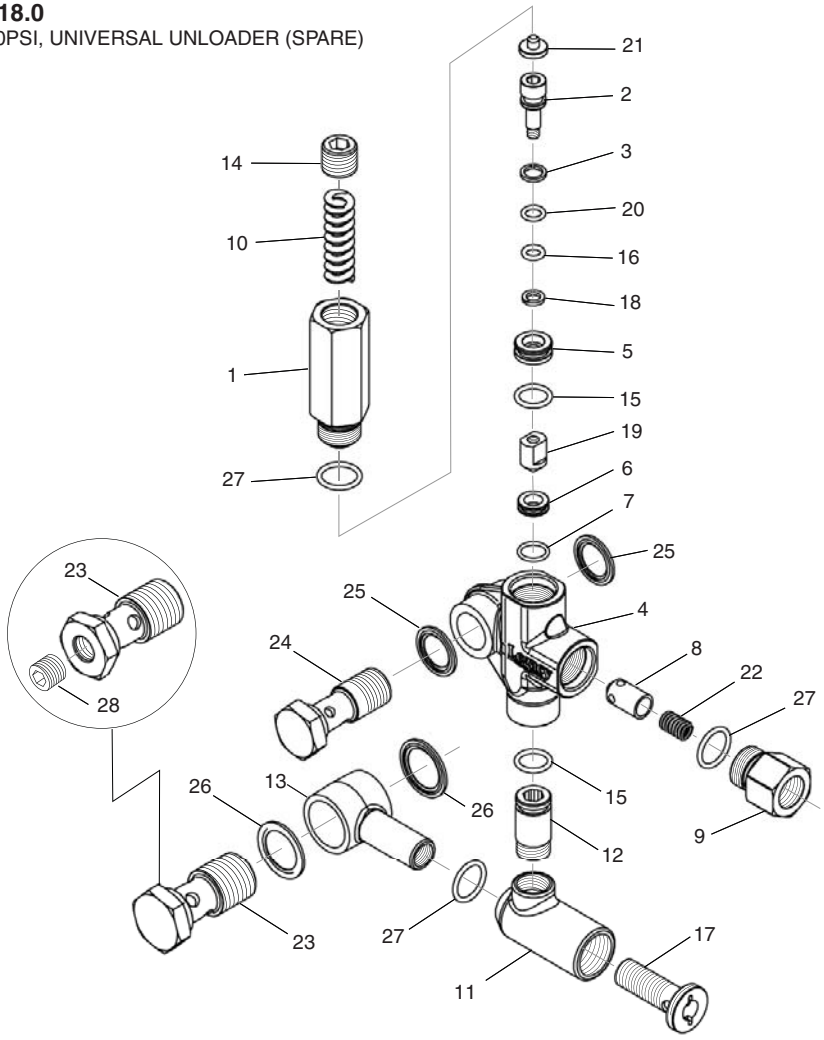
VBA 35 UNLOADER EXPLODED VIEW PARTS LIST

ITEM	PART NO.	DESCRIPTION	KIT	QTY
1		Body Valve (KG)		1
		Body Valve (KS)		1
2		O-Ring	A,C	1
3		Seat	C	1
4		Ball, Sub-assy	C	1
5		O-Ring	A	1
6	9.803-907.0	Guide Bushing		1
7		Teflon Ring		1
8		O-Ring	A	1
9		O-Ring	A	2
10	9.803-911.0	Connector		1
11		Teflon Ring	A	1
12	70-120207	Stem	C	1
13	9.803-941.0	Connector Female		1
13A	9.702-892.0	Connector Male		
14		O-Ring	A,B	1
15		Spring	B	1

ITEM	PART NO.	DESCRIPTION	KIT	QTY
16		Poppet	B	1
17	9.802-893.0	Seal Washer 3/8		2
18	9.803-915.0	Banjo Bolt 3/8" w 1/8" Pilot		1
	9.803-919.0	Banjo Bolt 3/8" Solid Cap		1
19	9.803-920.0	Banjo Bolt 1/2" w 1/4" Pilot		1
	8.750-105.0	Banjo Bolt 1/2" Solid Cap		
	9.803-919.0	Banjo Bolt 3/8" Solid Cap		
20	9.803-921.0	Seal Washer 1/2		2
21		Plate	C	1
22		Spring	C	1
23	8.933-021.0	Set Screw		1
24	9.803-925.0	Nut		1
25	9.803-926.0	Brass Handle		1
Kit A	8.717-672.0	O-Ring Repair Kit		
Kit B	8.717-673.0	Outlet Kit		
Kit C	8.717-674.0	Stem Repair Kit		

UU1 UNLOADER EXPLODED VIEW

9.175-018.0
UU1 3500PSI, UNIVERSAL UNLOADER (SPARE)



UU1 UNLOADER EXPLODED VIEW PARTS LIST

ITEM	PART #	DESCRIPTION	KIT	QTY
1	8.749-792.0	Piston housing		1
2		Piston	C	1
3		Piston O-ring back up	A	1
4	8.749-796.0	Main block		1
5	9.152-372.0	Piston ring		1
6		Ball seat	C	1
7		O-ring 10.5 ID X 1.5 CS	A,C	1
8		Plunger	B	1
9	9.152-016.0	Plunger housing		1
10		Bypass spring	C	1
11	9.149-001.0	Low pressure port		1
12	9.152-017.0	Sliding connector, 30mm		1
	8.762-005.0	Sliding connector, 40mm, long		1
13	9.149-002.0	Sliding connector H 1/2"		1
	9.149-005.0	Sliding connector H 3/8"		1
14	9.196-011.0	Plug 5/8 -18 UNF		1
15		O-ring 12 ID x 2 CS	A	2
16		O-ring 6 ID X 2 CS	A	1

ITEM	PART #	DESCRIPTION	KIT	QTY
17	9.149-006.0	Sliding connector guide		1
18		O-ring backup 6X 1.45X 1.68	A	1
19		Conical seal	C	1
20		O-ring 6.75 X 1.78 BN80	A	1
21		Spring seat	C	1
22		Plunger spring	B	1
23	8.917-699.0	Banjo bolt 1/2" short		1
	8.917-700.0	Banjo bolt 1/2"-1/4"NPT short		1
	8.917-698.0	Banjo bolt 3/8" short		1
24	8.917-698.0	Banjo bolt 3/8" short		1
25	9.802-893.0	Seal washer 3/8"		2
26	9.803-921.0	Seal washer 1/2"		2
	9.802-893.0	Seal washer 3/8"		2
27		O-RING 15 ID x 2CS	A,B	3
28	8.706-865.0	Plug, 1/4" countersunk		1
Kit A	9.104-038.0	O-ring Repair Kit		
Kit B	9.104-039.0	Outlet Kit		
Kit C	9.104-040.0	Stem Repair Kit		

TROUBLESHOOTING

PROBLEM	POSSIBLE CAUSE	SOLUTION
LOW OPERATING PRESSURE	Faulty pressure gauge	Install new gauge.
	Insufficient water supply	Use larger garden hose; clean filter washer at water inlet.
	Old, worn or incorrect spray nozzle	Match nozzle number to machine and/or replace with new nozzle.
	Plumbing or hose leak	Check plumbing system for leaks. Retape leaks with teflon tape.
	Faulty or misadjusted unloader valve (where applicable)	Adjust unloader for proper pressure. Install repair kit when needed. **Note:** Tampering with the factory setting may cause personal injury and/or property damage, and will void the manufacturer's warranty.
	Worn packing in pump	Install new packing kit.
	Fouled or dirty inlet or discharge valves in pump	Clean inlet and discharge valves.
	Worn inlet or discharge valves	Replace with valve kit.
	Slow engine RPM	Set engine speed per specifications (approximately 2800 RPM - 3400 RPM)
FLUCTUATING PRESSURE	Valves worn	Check and replace if necessary.
	Blockage in valve	Check and clean out if necessary.
	Pump sucking air	Check water supply and suction line for air seepage at joints.
	Worn piston packing	Check and replace if necessary.
PRESSURE LOW AFTER PERIOD OF NORMAL USE	Nozzle worn	Check and replace if necessary.
	Inlet or discharge valves blocked or worn	Check and clean or replace if necessary.
	Unloader valve seat worn	Check and replace if necessary.
PUMP NOISE	Air suction line	Check water supply and connections on suction line.
	Broken or weak inlet or discharge valve springs	Check and replace if necessary.
	Foreign matter in valves	Check and clean if necessary.
	Worn bearings	Check and replace if necessary.
	Excessive temperature of liquid	Reduce to below 180°F (75°C)

TROUBLESHOOTING

PROBLEM	POSSIBLE CAUSE	SOLUTION
PRESENCE OF WATER IN PUMP OIL	Water sprayed at machine	Change oil. Direct spray away from machine.
	High humidity in air	Check and change oil twice as often.
	Piston packing worn. Oil seal worn	Check and replace if necessary.
ENGINE STRAINS UNDER LOAD	Engine governor misadjusted	Readjust governor on engine. Take to local engine representative for adjustment.
	Incorrect spray nozzle	Install proper nozzle size (See serial plate for proper size).
	Obstruction in spray nozzle	Remove obstruction.
	Misadjusted unloader valve	Contact local dealer or technical support.
	Engine low or out of oil	Check oil level.
	Pump low or out of oil	Check oil level.
	Obstruction in hose, fitting	Clean or replace hose, fitting.
	Gasoline engine altitude	The gasoline engine is preset for operation at altitudes below 1000 feet above sea level. If operated at higher altitudes, it may be necessary to install a high altitude main jet carburetor. Contact your local authorized engine sales and service center for details.
OIL SQUIRTS OUT OF OIL CAP ON PUMP	Pump overfilled with oil	Maintain oil level at red dot on sight glass at rear of pump or at top of notch on dipstick (where applicable).
ENGINE OPERATES FOR 15 MINUTES THEN STOPS	Not enough gas or engine oil	Fill tank with gas. Check oil level.
	Vapor lock developed by heat of day	Keep gas tank full to avoid vapor lock.
	Obstruction in fuel filter	Clean or replace fuel filter.
WATER DRIPPING FROM UNDER PUMP	Piston packing worn	Check and replace if necessary.
	O-ring plunger retainer worn	Check and replace if necessary.
	Cracked piston	Check and replace if necessary.
OIL DRIPPING	Oil seal worn	Check and replace if necessary.
EXCESSIVE VIBRATION IN DELIVERY LINE	Irregular functioning of the valves	Check and replace if necessary.
WATER LEAKING FROM PUMP PROTECTOR	Spray gun closed with machine running 5 minutes or longer.	Open spray gun or turn off machine.
	Excessive water supply pressure	Place a pressure regulator at end of 50' garden hose.

Form # 9.800-416.0 • Revised 12/10 • Printed in U.S.A. or Mexico